AMENDMENTS TO THE CLAIMS

This listing of claims supercedes all prior versions and listings of claims in this application:

LISTING OF CLAIMS:

1-2. (cancelled)

3. (currently amended): [[The]] A means for controlling spindle motor speed ~~of claim 2~~, of an optical disc reproducing device having a buffer that buffers data reproduced from a disc and reproduces an audio signal, comprising:

an EFM demodulation means for EFM (Eight to Fourteen Modulation)-demodulating the data read by the disc and outputting EFM data and a WFCK (Write Frame Sync Clock);

a frequency error measurement means for comparing a frequency of the WFCK extracted by the EFM demodulation means with a frequency of a theoretical WFCK and outputting the difference between the extracted WFCK and the theoretical WFCK as a first error value;

a buffering means for storing the EFM data, performing ECC (Error Code Correction) of the stored EFM data and storing transfer data to be transmitted to an external system for reproduction of an audio signal after the ECC;

a lead/lag detection means for comparing points in the buffering means where the EFM data is recorded and the transfer data is read, and identifying whether a transfer pointer leads or lags behind an EFM pointer;

wherein the lead/lag detection means compares the points in the buffering means where the EFM data is recorded and the transfer data is read, and generates a lead signal indicating that the transfer pointer is located before the EFM pointer or a lag signal indicating that the transfer pointer is located after the EFM pointer;

wherein the lead/lag detection means generates the lead signal and the lag signal only when ~~the~~ a gap between the transfer pointer and the EFM pointer exceeds a prescribed range[[.]]; and

a motor control signal generating means for controlling the rotation of the spindle motor that rotates the disc, based on the first error value provided by the frequency error measurement means and the lead signal or the lag signal generated by the lead/lag detection means.

4. (currently amended): The means for controlling spindle motor speed of claim 3, wherein the lead/lag detection means is configured to permit varying ~~vary~~ the prescribed range.

5. (currently amended): ~~The~~ A means for controlling spindle motor speed ~~of claim 1~~ of an optical disc reproducing device having a buffer that buffers data reproduced from a disc and reproduces an audio signal, comprising:

an EFM demodulation means for EFM (Eight to Fourteen Modulation)-demodulating the data read by the disc and outputting EFM data and a WFCK (Write Frame Sync Clock);

a frequency error measurement means for comparing a frequency of the WFCK extracted by the EFM demodulation means with a frequency of a theoretical WFCK and outputting the difference between the extracted WFCK and the theoretical WFCK as a first error value;

a buffering means for storing the EFM data, performing ECC (Error Code Correction) of the stored EFM data and storing transfer data to be transmitted to an external system for reproduction of an audio signal after the ECC;

a lead/lag detection means for comparing points in the buffering means where the EFM data is recorded and the transfer data is read, and identifying whether a transfer pointer leads or lags behind an EFM pointer,

a motor control signal generating means for controlling the rotation of the spindle motor that rotates the disc, based on the first error value provided by the frequency error measurement means and a comparison by the lead/lag detection means,

wherein the motor control signal ~~generation~~ generating means adds - α or + α to the first error value generated by the frequency error measurement means depending on ~~the lead/lag information detected by~~ the comparison by the lead/lag detection means.

6-8. (cancelled)

9. (currently amended): [[The]] A spindle motor speed control apparatus ~~of claim 8~~, comprising:

an EFM (Eight to Fourteen Modulation) demodulator that demodulates data reproduced from a disc and outputs EFM data and an extracted WFCK (Write Frame Sync Clock);

a frequency error measurement unit that compares a frequency of a WFCK extracted by the EFM demodulator with a frequency of a theoretical WFCK and outputs the difference between the extracted WFCK and the theoretical WFCK as a first error value;

a unit with a buffer that stores the EFM data, performs ECC (Error Code Correction) of the stored EFM data, and stores transfer data to be transmitted to an external system for reproduction of an audio signal after ECC is performed;

a lead/lag detector that compares points in the buffer where the EFM data is recorded and the transfer data is read, and identifies whether a transfer pointer leads or lags an EFM pointer,

wherein the lead/lag detector generates a lead signal indicating the transfer pointer is located before the EFM pointer or a lag signal indicating the transfer pointer is located after the EFM pointer, and

wherein the lead/lag detector generates ~~the at least one of the~~ a lead signal ~~and~~ or ~~the~~ a lag signal only when the gap between the transfer pointer and the EFM pointer exceeds a prescribed range[[.]]; and

a motor control signal generator that controls the rotation of the spindle motor that rotates the disc, based on the first error value provided by the frequency error measurement unit and the lead signal or the lag signal generated by the lead/lag detector, to reproduce an audio signal.

10. (currently amended): The spindle motor speed control apparatus of claim 9, wherein the lead/lag detector is configured to permit varying of ~~vary~~ the prescribed range.

11. (currently amended): [[The]] A spindle motor speed control apparatus ~~of claim 6,~~ comprising:

an EFM (Eight to Fourteen Modulation) demodulator that demodulates data reproduced from a disc and outputs EFM data and an extracted WFCK (Write Frame Sync Clock);

a frequency error measurement unit that compares a frequency of a WFCK extracted by the EFM demodulator with a frequency of a theoretical WFCK and outputs the difference between the extracted WFCK and the theoretical WFCK as first error value;

a unit with a buffer that stores the EFM data, performs ECC (Error Code Correction) of the stored EFM data and stores transfer data to be transmitted to an external system for reproduction of an audio signal after ECC is performed;

a lead/lag detector that compares points in the buffer where the EFM data is recorded and the transfer data is read, and identifies whether a transfer pointer leads or lags an EFM pointer;

a motor control signal generator that controls the rotation of the spindle motor that rotates the disc, based on the first error value provided by the frequency error measurement unit and a lead/lag information detected by the lead/lag detector, to reproduce an audio signal;

wherein the motor control signal generator adds - α or + α to the first error value generated by the frequency error measurement unit depending on the lead/lag information detected by the lead/lag detector.

12-14. (cancelled).

15. (currently amended): [[The]] A method of ~~claim 14,~~ controlling a spindle motor speed, comprising:

(a) demodulating data reproduced from a disc to generate EFM (Eight to Fourteen Modulation) demodulated data and extracting a WFCK (Write Frame Sync Clock);

(b) comparing a frequency of an extracted WFCK with a frequency of a theoretical WFCK and generating an error value comprising a difference between the extracted WFCK and the theoretical WFCK;

(c) buffering EFM data, performing ECC (Error Code Correction) of the EFM data stored in the buffer, and storing transfer data to be transmitted to an external system for reproduction of an audio signal after ECC is performed;

(d) comparing points where the EFM data is recorded and the transfer data is read to identify whether a transfer pointer leads or lags an EFM pointer;

~~wherein said (d) generates the at least one of the~~ (e) generating a lead signal ~~and~~ or ~~the~~ a lag signal only when the gap between the transfer pointer and the EFM pointer exceeds a prescribed range[[.]]; and

(f) controlling the spindle motor rotation speed based on the error value and a lead/lag information, to reproduce an audio signal.

16. (original): The method of claim 15, wherein the prescribed range can be varied.

17. (currently amended): [[The]] A method of ~~claim 12,~~ controlling a spindle motor speed, comprising:

(a) demodulating data reproduced from a disc to generate EFM (Eight to Fourteen Modulation) demodulated data and extracting a WFCK (Write Frame Sync Clock);

(b) comparing a frequency of an extracted WFCK with a frequency of a theoretical WFCK and generating an error value comprising a difference between the extracted WFCK and the theoretical WFCK;

(c) buffering EFM data, performing ECC (Error Code Correction) of the EFM data stored in the buffer, and storing transfer data to be transmitted to an external system for reproduction of an audio signal after ECC is performed;

(d) comparing points where the EFM data is recorded and the transfer data is read to identify whether a transfer pointer leads or lags an EFM pointer;

(e) ~~wherein said (e) adds - α or + α to the error value depending on said pointer leads or lags detected in said (d)~~ adding - α or + α to the error value depending on whether said transfer pointer leads or lags the EFM pointer and controlling the spindle motor rotation speed based on the error value whether the said transfer pointer leads or lags the EFM pointer, to reproduce an audio signal.